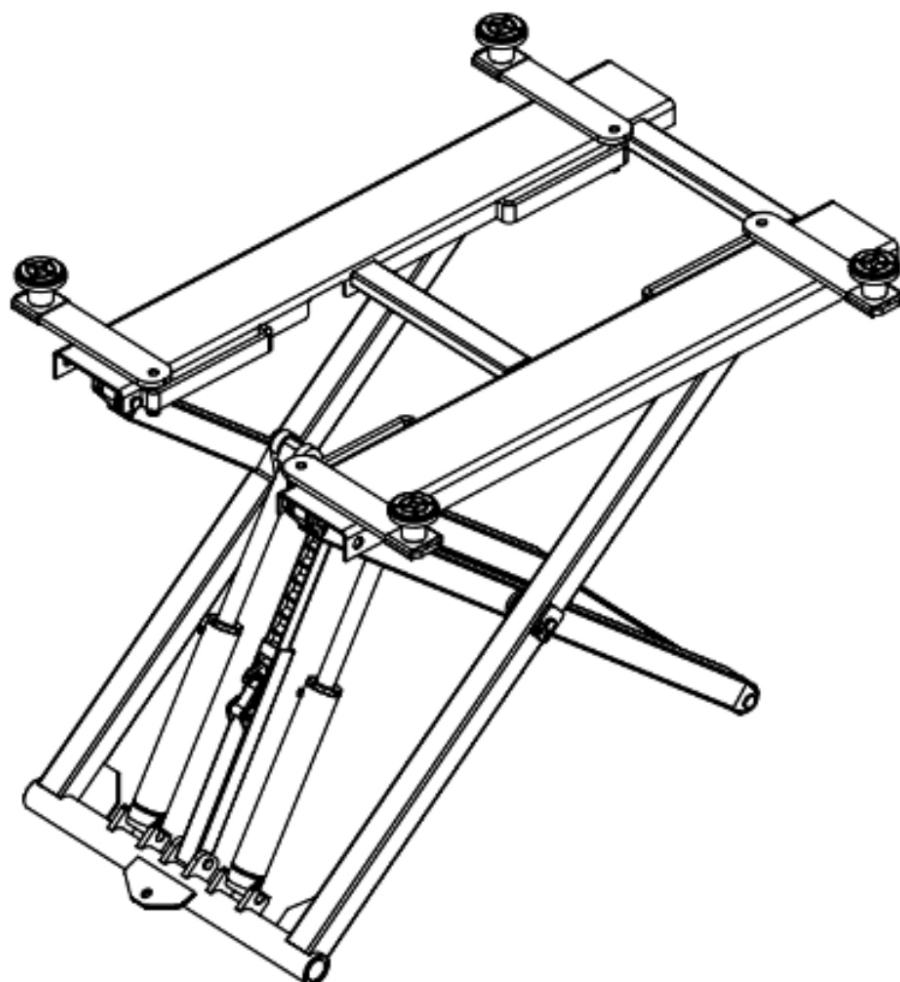




Low rise small scissor lift

Ref: 9831



USER'S MANUAL (EN)

Operation Manual & Instruction

HYDRAULIC AUTOMOBILE LIFT

Model:

Serial No.:

Year of Manufacture:

Manufacturer:

Name:

Address:

Tel:

Fax:

Http:

AUTHORISED SERVICE CENTRE:

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Contents

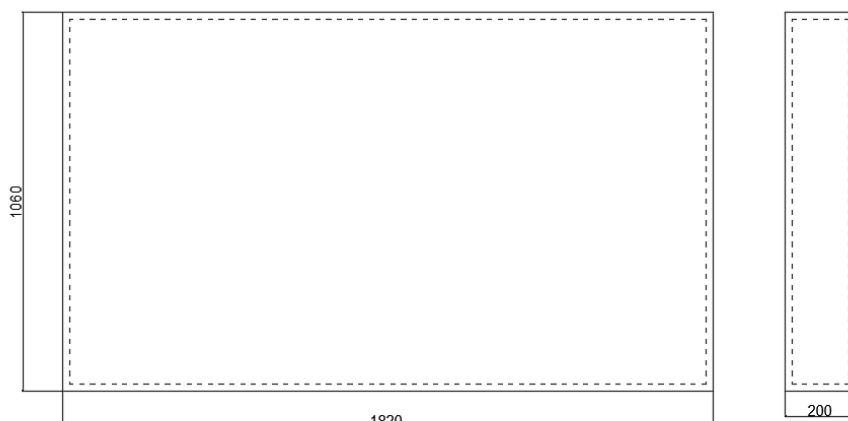
Manufacture and service

Packing, transport and storage

Introduction

- Description of the machine
- Technical specifications
- Safety
- Installation
- Adjustment
- Operation
- Maintenance and care
- Troubleshooting
- Accessory

PACKING (Picture 1)



Picture 1

TRANSPORT (Picture 2)



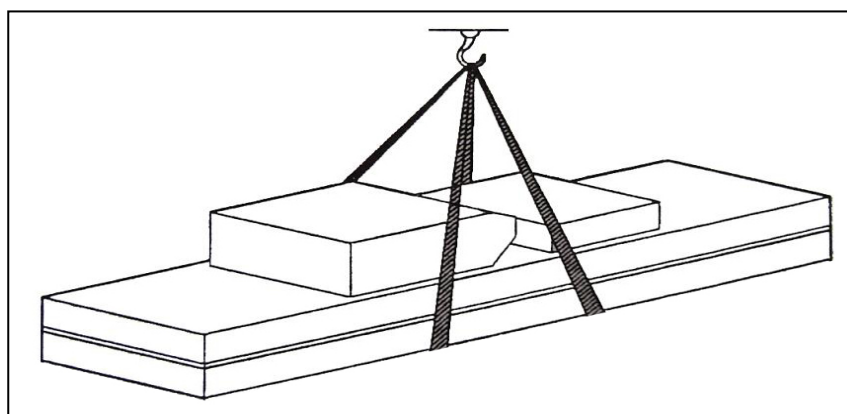
Packing can be lifted or moved by lift trucks, cranes or bridge cranes. In case of slinging, a second person must always take care of the load, in order to avoid dangerous oscillations.

During loading and unloading operation, goods must be handled by vehicles or ships. At the arrival of the goods, verify that all items specified in the delivery notes are included.

If finding missing parts, possible defects or damage due to transport, one should examine damaged cartons according to 'Packing List' to verify the condition of damaged goods and missing parts, also the person in charge or the carrier must be immediately informed.

The machine is heavy goods! Don't take manpower load and unload and transporting way into consideration, the safety of working is important.

Furthermore, during loading and unloading operation, goods must be handled as shown in the picture. (Picture 2)



Picture 2

STORAGE:

- The machine equipment should be stocked in the warehouse, if stocked outside should do the disposal well of waterproof.
- Use box truck in the process of transport, use container storage when shipping.
- The control box should be placed perpendicularly during the transport; and prevent other goods from extrusion.
- The temperature for machine storage: -25°C-- 55°C

INTRODUCTION



This manual has been prepared for workshop personnel expert in the use of the lift operator and technicians responsible for routine maintenance fitter.

Workers should read the 'Maintenance & User Manual' carefully before carrying out any operation with the lift. This manual contains important information regarding:

- The personal safety of operators and maintenance workers.
- Lift safety
- The safety of lifted vehicles



CONSERVING THE MANUAL

This manual is an integral part of the lift.

The manual must be kept in the vicinity of the lift, so that the operator and maintenance staff must be able to locate and consult the manual quickly and at any time.

Attentively reading Chapter 3, which contains important information and safety warning, is particularly recommended.

The lift is designed and manufactured according to European Standard



The lifting, transport, unpacking, assembly, installation, starting up, initial adjustment and testing, extraordinary maintenance, repair, overhauls, transport and dismantling of the lift must be performed by specialized personnel from the licensed dealer authorized by the manufacturer.

The manufacturer declines all responsibility for injury to persons or damage to vehicles or objects when any of the above mentioned operations has been performed by unauthorized personnel or when the rack has been subject to improper use.



This manual indicates: the operative and safety aspects that may prove useful to the operator and maintenance worker. For better understanding the structure and operation of the lift and for best use of the same, workers must read the 'Maintenance & Use Manual' carefully before carrying out it.

In order to understand the terminology used in this manual, the maintenance and repair activities, the ability to interpret correctly the drawings and descriptions contained in the manual and be the country in which the machine has been installed. The same applies to the maintenance and the maintenance fitter must also possess specific and specialized knowledge both in mechanical and engineering field.

- OPERATOR: person authorized to use the lift
- MAINTENANCE FITTER: person authorized for routine maintenance of the lift.

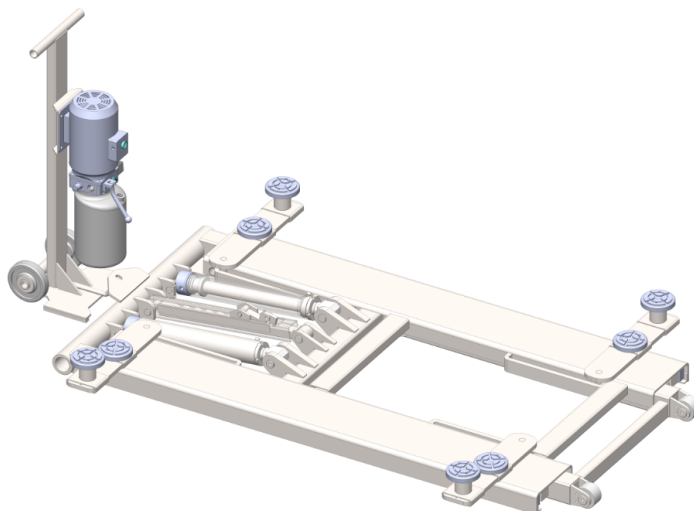


Manufacturer owns the right to make little change for the manual owing to the improvement of technology.

Chapter 1 DESCRIPTION OF THE MACHINE

Machine Application:

This lift can lift each kind of vehicle which weight is not over 2800kg, and is suitable for use in vehicle tests, maintenance, and caring for automobiles, which is particularly suitable for use in the basement or on the floor without hole. Meanwhile, this model can be movable with the following device (optional parts--pole and wheels).



Structure Features:

- Use hidden and thin scissor structure, dispense with construction, the occupation is small.
- Independent and movable control box, low-voltage controlling, good security.
- Own protection of safety valve and burst-proof equipment for hydraulic failure and over loading. So when the oil pipe bursts, the machine will not fall quickly.
- Use high quality hydraulic or electric element parts made in Italy, Germany, Japan and so on.
- Own manual lowering operation when the power is cut off.
- Movable.

Equipment:

- Machine basement (The position and space of equipment installation)
- Machine frame (The main structure of lift and insurance institution)
- Control box (Machine-controlled part)

Basic structure

The machine basement is made of cement and concrete.

Frame

Make of steel connecting rod, main lifting platform, and hydraulic oil tank.

Control box

Under the control box is hydraulic oil tank and hydraulic pump, valve and other control system. On the control box is electrical system.



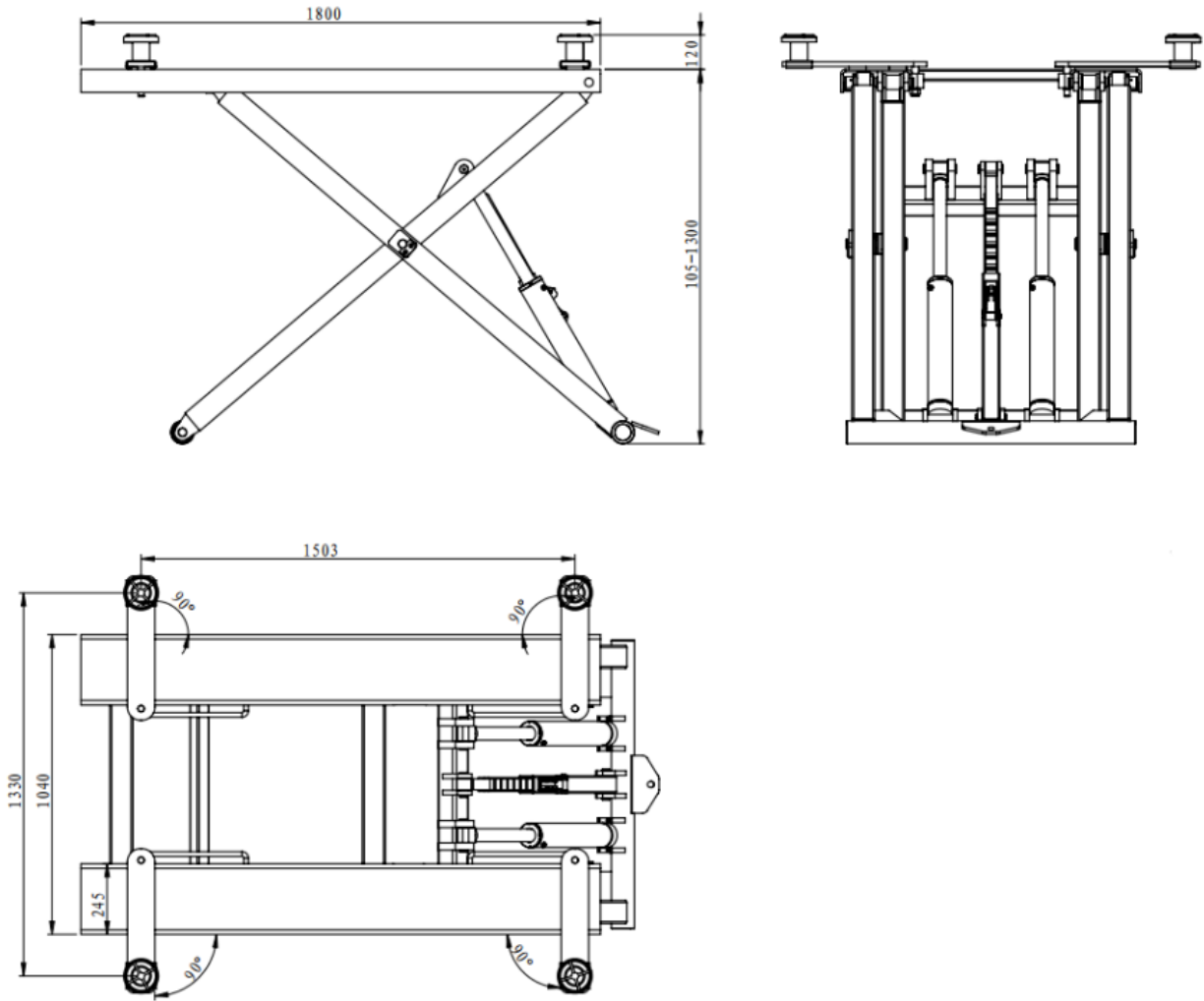
Scissor lift is designed and built to lift all kinds of vehicles, all other use are unauthorized. In particular, the lift is not suitable for washing spray work. And not lift the vehicle whose weight exceeds the maximum weight.

Main technical parameter

Machine type	2.8HS
Drive	Electrical hydraulic
Lifting weight	2800kg
Lifting height	1300mm
Platform initial height	105mm
Platform length	1800mm
Platform width	1040mm
Lifting time	≤50s
Descent time	≤60s
Whole machine length	1800mm
Whole machine width	1330 mm
Weight	350kg
Voltage	AC 380V
Power	2.2kw
Hydraulic oil	12L corresponds to wearable hydraulic oil (prepared by user)
Working temperature	5-40℃
Working humidity	30-95%
Noisy level	< 76db
Installation height	Height above sea level ≤ 1000M
Storage temperature	-25℃~55℃
Installation place	Indoor

Table 1

Lift dimension picture:



Picture 4

<p>Motor</p> <p>Type.....MS90L</p> <p>Power..... 2.2kw</p> <p>Voltage.....AC 400 or 230V ±5%</p> <p>Power supply..... 400VAC:20A230V:40A</p> <p>Max Frequency.....50Hz (optional choose 60HZ)</p> <p>Poles..... 4</p> <p>Speed.....1450rpm /min</p> <p>Buildina shane R14</p>	<p>Pump</p> <p>Type.....P1.7</p> <p>Model.....gear pump</p> <p>Max flux.....1.7cc/r</p> <p>Joint type.....direct joint</p> <p>Overflow valve</p> <p>Setting pressure.....280 bar</p> <p>Adjustable working pressure.....150~300 bar</p>
--	---

Supply at the same time

-Connect to the power supply jack of control box (400V or 230V)

Requirements:

-Concrete type 425#, the period of desiccation is 15 days.

-Clean the basic layer, thickness of concrete $\geq 150\text{mm}$, the leveling of whole length $\leq 5\text{mm}$.



THE LOWER PARTS OF THE VEHICLES UNDERBODY COULD INTERFERE WITH STRUCTURAL PARTS OF THE LIFT, TAKE PARTICULAR PARTS OF THE SPORTS-CAR.

The lift will also handle customized or non-standard vehicles provided they are within the maximum specified carrying capacity.

Also the personnel safety zone must be defined in relation to vehicle with unusual dimensions.



Read this chapter carefully and completely since important information for the safety of the operator or others in case of improper use of the lift is included.

In the following text there are clear explanations regarding certain situations of risk or danger that may arise during the operation or maintenance of the lift, the safety device installed and the correct use of such systems, residual risks and operative procedures to use (general specific precautions to eliminate potential hazards).



Lifts are designed and built to lift vehicles and hold them in the elevated position in an enclosed workshop. All other uses of the lifts are unauthorized. In particular, the lifts are not suitable for:

- Washing spray work;
- Creating raised platforms for personnel or lifting personnel;
- Use as a press for crushing purposes;
- Use as elevator;
- Use as a lift jack for lifting vehicle bodies or changing wheels.



The manufacturer is not liable for any injury to persons or damage to vehicles and other property caused by the incorrect and unauthorized use of the lifts.

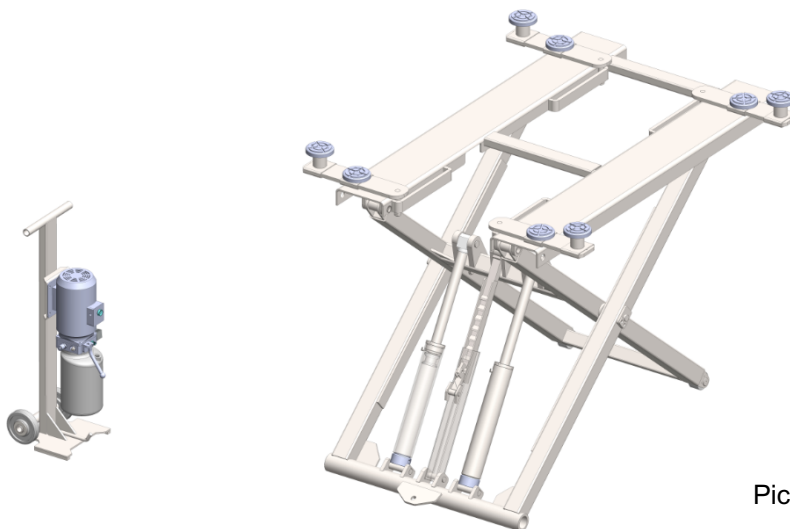
During lifting and descent, the operator must remain in the control station as the diagrams illustrated.

As the diagrams illustrated, the presence of persons inside the danger zone indicated is strictly prohibited. During operations, persons are admitted to the area beneath the vehicle only when the vehicle is already in the elevated position, when the platforms are stationary, and when the mechanical safety devices are firmly engaged (e.g.: the safety gear is completely locked).



DO NOT USE THE LIFT WITHOUT PROTECTION DEVICES OR WITH THE PROTECTION DEVICES INHIBITED.

FAILURE TO COMPLY WITH THESE REGULATIONS CAN CAUSE SERIOUS INJURY TO PERSONS, AND IRREPARABLE DAMAGE TO THE LIFT AND THE VEHICLE BEING LIFTED.



Picture 6

GENERAL PRECAUTIONS



The operator and the maintenance fitter are required to observe the prescriptions of safety regulation in force in the country of installation of the lift.

Furthermore, the operator and maintenance fitter must:

- Always work in the stations specified and illustrated in this manual;
- Never remove or deactivate the guards and mechanical, electrical, or other types of safety devices;
- Read the safety notices placed on the machine and the safety information in this manual.



In the manual all safety notices are shown as follows:

WARNING: indicates following operations that are unsafe and can cause minor injury to persons and damage the lift, the vehicle or other property.



CAUTION: indicates possible danger that can result in serious injury to people and damage property.



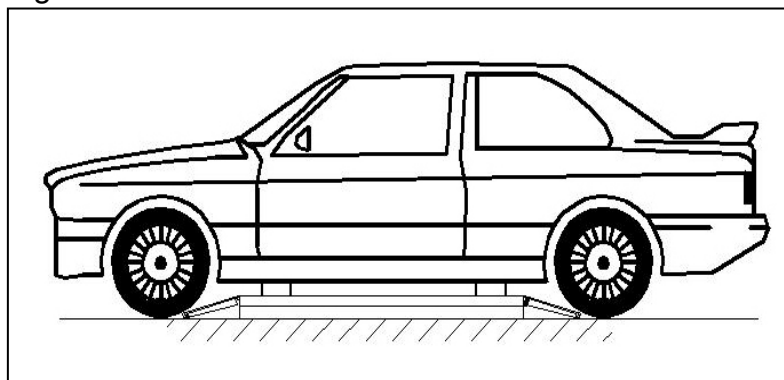
RISK OF ELECTRIC SHOCK: a specific safety notice placed on the lift in areas where the risk of electric shock is particularly high.

RISK AND PROTECTION DEVICES

We shall now examine the risks that operators or maintenance fitters may be exposed to when the vehicle is standing on the platforms in the raised position, together with the various safety and protection devices adopted by the manufacturer to reduce all such hazards to the minimum:

For optimal personal safety and safety of vehicles, observe the following regulations:

- Do not enter the danger areas when vehicles are being lifted. (Picture 6)
- Make sure the vehicle is positioned correctly. (Picture 7)
- Be sure to lift only approved vehicles, never exceed the specified carrying capacity, maximum height, and projection (vehicle length and width);
- Make sure that there is no person on the platforms during up and down movements and during standing.



Picture 7

GENERAL RISKS FOR LIFTING OR DESCENT:

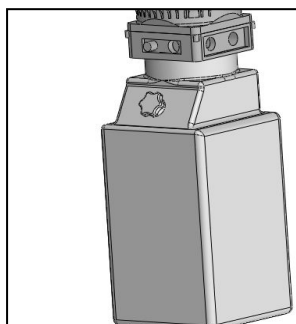
The following safety equipments are used to protect over loading or the possibility of

engine failure.

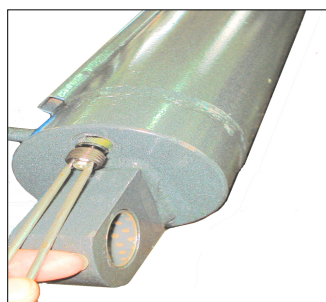
In the condition of over loading, the overflow valve will open and directly return oil to the oil tank. (See Picture 8)

Chapter 3 SAFETY

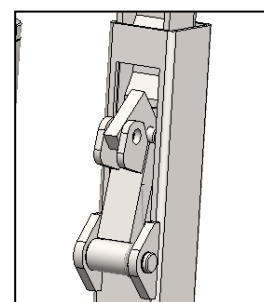
Each bottom of oil cylinder is equipped with antiknock valve. When the oil pipe is burst in the circuit of hydraulic pressure, the relevant antiknock valve will work and limit the speediness of platform. (See Picture 9)



Picture 8



Picture 9



Picture10 (safety lock)



There is nothing abnormal should be left on the safety modules to prevent safety gear from occlude normally.



RISKS FOR PERSONNEL

This heading illustrates potential risks for the operator, maintenance fitter, or any other person present in the area around the lift, result from incorrect use of the lift.



RISKS FOR EXTRUSION

During up and down operations, personnel leave the said area without following the rule and instruction.

During up and down operations, no person is admitted to work beneath the movable parts of the lift, should work in the safe zone. (Picture 6)



RISK OF IMPACT (Picture 10)

Before the operator begins up and down movements, make sure that there are no personnel inside the danger zone. When, due to operational reasons, the lift is stopped at relatively low elevations (lower than 1.75m above the ground) personnel must be careful to avoid impact with parts of the machine not marked with special colors.



RISK OF FALLING OFF (PERSONNEL)

During up and down operations, personnel are prohibited from entering the platforms and the vehicle to avoid falling off.



RISK OF FALLING (VEHICLE)

This hazard may arise in the case of incorrect positioning of the vehicle on the platforms, overweight of the vehicle, or in the case of vehicles of dimensions

that are not compatible with the capacity of the lift.



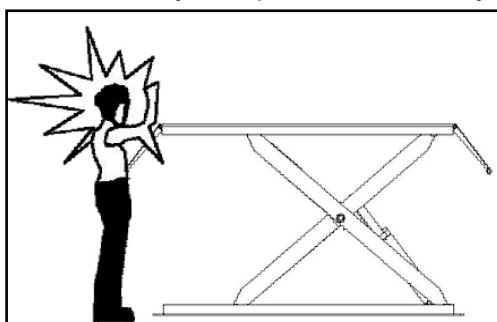
When the platform is being tested, the vehicle engine cannot be turned on. There is nothing should be placed on the lift-lowering area and the movable parts of the lift.

Chapter 3 SAFETY

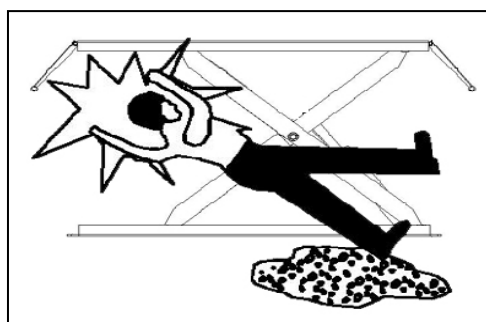


RISK OF SLIPPING (Picture 12)

The floor caused by lubricant contamination of around the lift. The area beneath and immediately surrounding the lift and also the platforms must be kept clean. Remove any oil spills immediately.



Picture 11



Picture 12

RISK OF THE CENTER OF GRAVITY OF VEHICLE

The car Centre of gravity must be placed in the center of the lifting machine (Picture13)



RISK OF ELECTRIC SHOCK

Risk of electric shock of the areas of insulated in electric equipments were shattered.

Do not use jets of water, steam solvents or paint next to the lift, and take special care to keep such substances clear of the electrical control panel.



RISKS RELATED TO INAPPROPRIATE LIGHTING

The operator and the maintenance fitter must be able to assure that all the areas of the lift are properly and uniformly illuminate compliance with the laws in force in the place of installation.

During up and down operations, the operator should continually observe the lift and can operate it only in the position of operator. When lifting and lowering the vehicle, the cushion needs being put in the bottom of chassis.



The handling of safety devices is strictly forbidden. Never exceed the maximum carrying capacity of the lift, make sure the vehicles to be lifted have no load.

It is therefore essential to adhere scrupulously to all regulations regarding use, maintenance and safety contained in this manual.

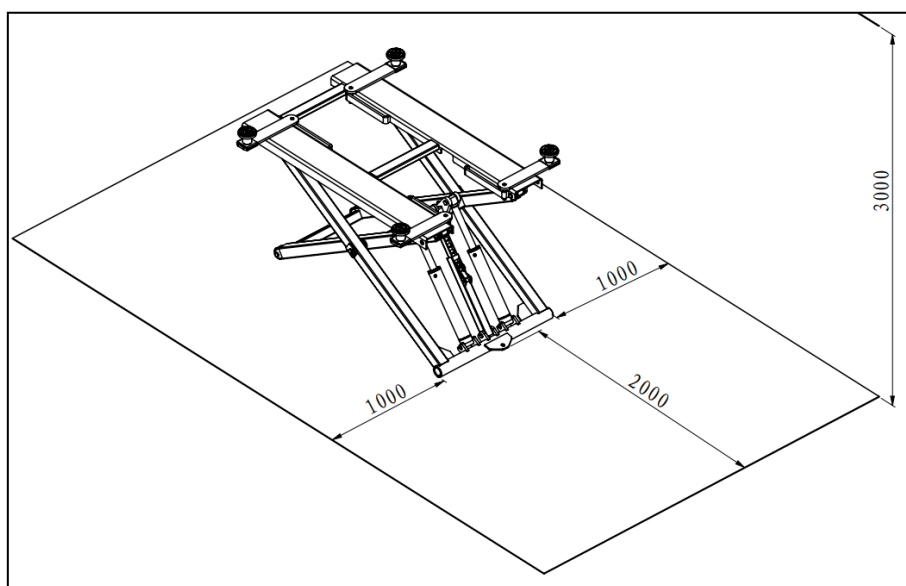


SKILLED AND AUTHORIZED PERSONNEL ONLY SHOULD BE ALLOWED TO PERFORM THESE OPERATIONS, FOLLOW ALL INSTRUCTIONS SHOWN BELOW CAREFULLY, IN ORDER TO PREVENT POSSIBLE DAMAGE TO THE CAR LIFT OR RISK OF INJURY TO PEOPLE.

Skilled technicians only appointed by the same manufacturer or by authorized dealers, are allowed to install the car lift.

INSTALLATION REQUIREMENTS

- The car lift must be installed according to the specified safety distances from walls, pole and what other equipments stated. (Picture 14)
- The specified safety distances from walls must be 1000 mm at least, taking into consideration the necessary space to work easily. Because space for the control site and for possible runways in case of emergency is also necessary.
- The room must be previously arranged for the power supply and pneumatic feed of the car lift.
- The room must be 4000 mm in height, at least.
- The car lift can be placed on any floor, as long as it is perfectly level and sufficiently resistant. ($\geq 250 \text{ kg/ cm}^2$, the thickness of concrete $\geq 150 \text{ mm}$)



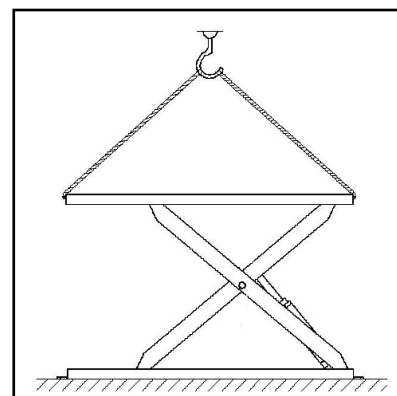
Picture 14

- All parts of the machine must be uniformly lit with sufficient light to make sure that the adjustment and maintenance operations can be performed safely, and without reflected light, glare that could give rise to eye fatigue.
- The integrality of arrived goods should be checked before the lift is installed.
- Moving and installing lift should follow the process as the picture instructs.

The transport and storage of machine refers to “TRANSPORT AND STORAGE” on page 4.

Platform Installation:

- Place the platforms on the position of the location.
- The bottom of hydraulic cylinder is located in the frontage of machine (the direction of driving on the vehicle)
- Use fork lift or other lifting equipments to lift the platform (Picture 15) and insert a wood in the middle part of joint pole.



Picture 15



Prohibit working beneath the lift when hydraulic system is not completely equipped with hydraulic oil and take the action of up and down operations.

LINE CONNECTION



Connect the electrical and oil line according to 'the electrical diagram' and 'oil pipe connection diagram'. In the process of connecting oil pipe, pay particularly attention to the protection of pipe tie-in to prevent abnormal thing from entering oil loop, then damaging hydraulic system.

ELECTRIC CIRCUIT CONNECTION:

Follow the stated line- pathway and line-number of the 'electrical diagram' to connect electric circuit.

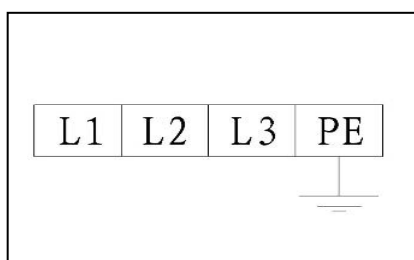


Only skilled person is allowed to perform the operations.

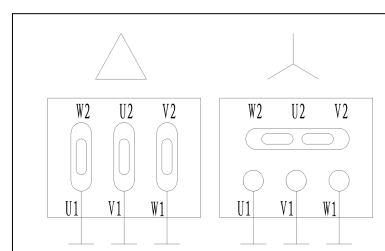
-Open the control box front cover.

-Connection of power supply: the 380V three-phase and five-line connection wires (3×2.5 mm² + 2×1.5 mm² cable wire) for power supply are connected to control box L1, L2, L3, N and entering-wire terminal. If the lift is operated at 230V single-phase, then connected to control box L2, N2 ,entering-wire Terminal. The PE ground wire is connected under the bolt marked ground firstly (Picture 16) and then connected under the bolt marked ground of two platforms.

-If the lift is operated at 230V three-phase, change the connection on the transformer and motor. (Picture 17)



Picture 16



Picture 17

Chapter 4 INSTALLATION

OIL PIPE CONNECTION:

Follow "oil pipe diagram" to connect the oil pipes.



Only skilled and authorized person is allowed to perform the operations.

And pay particularly attention to the protection of oil pipe fitting.

-Following oil pipe number to lead the oil pipe from control box to the cylinder.

(Refer to "oil pipe diagram")

-When connecting oil pipes, pay attention to the protection of oil pipe tie-in to prevent impurities from entering hydraulic circuit.



When connect the oil pipes, be careful not to mistake each oil pipe number.

During the standard installation, control box is in the nearside of vehicle-entering direction. If placed on the right should adjust relevant oil pipe.

**Add oil and check the order of phase.**

After installing lift as Picture 4 required and connecting hydraulic circuit and electric circuit, operate it as following:

-open the hydraulic oil tank, add 12L of hydraulic oil into the oil tank, the hydraulic oil is provided by the user.

Make sure the clean of hydraulic oil, prevent any impurity into the oil line, lead the digest of the oil line and no working of the electromagnetic valve.

-Turn the "MAIN SWITCH" to turn on power, and click the 'UP' button, check whether the motor turns clockwise (looking downward), if not press **power** button, change the phase of the motor.



When turn on power, the high voltage will exist in the control box, only authorized person can operate it.

No load of main machine test:

-Turn on '**MAIN SWITCH**' to turn on the power.

-Press "**UP**" button, pay attention to the synchronization and placidity of the lifting.

-Check whether lock latch is correctly located.

-Check whether the oil line and the air line are leakage.



When testing the lift, no person or other things are allowed to stand or be put near the two sides or beneath the machine. If any abnormal is found, turn off "**MAIN SWITCH**" to stop it immediately. After clearing obstacles, do the test again.

Load of machine test:

-Drive the vehicle which weight doesn't exceed maximum lift weight to the platform, and then the driver leaves it.

-Put the lift rubber on the platform.

-Press '**UP**' button, lift the platform and pay attention to the synchronization and placidity of the lifting.

-Check whether safety pawl is correctly located.

-Check whether the oil line and the airline are leakage.



When beginning load of machine test, no person or other things are allowed to stand or be put near the two sides or beneath the machine.

Test vehicle whose weight doesn't exceed maximum lift weight.

Check whether the oil line and the air line are leakage. If any abnormal is found, urn off "**MAIN SWITCH**" to stop it immediately. After clearing obstacles, do the test again.

Chapter 6 OPERATION



Only skilled and having been trained personnel is allowed to perform the operations. Check proceedings as following.

Operation Notices:

- Clear obstacles around the lift before operation.
- During lifting or lowering, no person is allowed to stand near the two sides and beneath the machine, and no person is allowed on the two platforms.
- Avoid to lifting over weight vehicles or other goods.
- When lifting vehicle, the chassis of the vehicle should be filled up with rubber cushion.
- Pay attention to the synchronization of the lifting and lowering. If any abnormal is found, stop the machine timely, check and remove the trouble.
- When the equipment is not used for a long time or overnight, the machine should be lowered to the lowest position on ground, and remove vehicle, then cut off power supply.

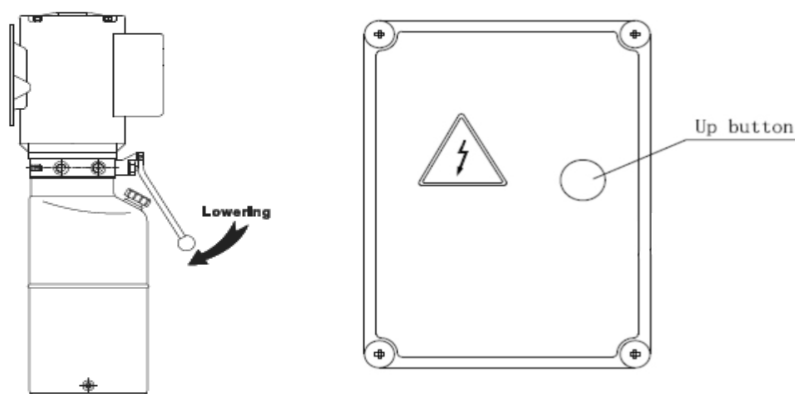
Instructions on electric operation: (see the operation panel)

LIFTING:

- Press 'UP' button on power unit, the oil pump will work immediately. Hydraulic oil is sent to hydraulic cylinder, and the platforms are being lifted.
- Release 'UP' button, the oil pump will stop immediately. The platforms stop lifting.

DESCENT:

- Press the lever at the power unit, and the platforms descend.
- Release the lever, platforms stop descending.



Chapter 7 MAINTENANCE AND CARE



Skilled personnel only are allowed to perform the operations.

- All bearings and hinges on this machine must be lubricated once a week by using an oilier.
- The upper and lower sliding blocks and other movable parts must be lubricated once a month.
- The hydraulic oil must be replaced one time each year. The oil level should always be kept at upper limit position.



The machine should be lower to the lowest position when replace hydraulic oil, then let the old oil out, and should be filtering the hydraulic oil.

-Each team checks the agility and reliability of pneumatic safety equipment.

Chapter 8 TROUBLESHOOTING



Skilled personnel only are allowed to perform the operations.

Failure and Resolutions

Failure	Cause	Troubleshooting
The motor does not run in lifting operation.	① Connection of power supply wires is not correct.	Check and correct wire connection
	② The AC contactor in the circuit of the motor does not pick up.	If the motor operates when forcing the contactor down with an isolation rod, check the control circuit. If the voltage at two ends of the contactor coil is normal, replace the contactor.
	③ The limit switch is not closed.	Check the limit switch, wires, to adjust or replace the limit switch.
In lifting operation, the motor runs, but there is no lifting movement	① The motor turns reverse.	Change the phases of the power supply wires.
	② Lifting with light load is normal but no lifting for heavy load.	The set safe pressure of the over-flow valve may be increased by turning the set knob right ward slightly. The spool of the lowering solenoid valve is stuck by dirt. Clean the spool.
	③ The amount of hydraulic oil is not enough.	Add hydraulic oil.
When press "down handle", the machine is not lowered	① The 'antiknock valve' is blocked.	Remove the 'antiknock valve' from the oil supply hole at the bottom of the oil cylinder, and clean the "antiknock valve".
The machine lowers extremely slowly under normal loads.	① The hydraulic oil has too high viscosity or frozen, deteriorated (in Winter).	Replace with hydraulic oil in accordance with the instruction book.
	② The "antiknock valve" for preventing oil pipe burst is blocked.	Use a wood block on the bottom plate to lock the lift, then remove the "antiknock valve" from the oil supply hole at the bottom of the oil cylinder, and clean the 'antiknock valve'.
Noisy lifting and lowering.	① Lubrication is not enough.	Lubricate all hinges and motion parts (including piston rod) with machine oil
	② The base or the machine is twisted.	Adjust again the levelness of the machine, and fill the pad the on base.

Table 2

Chapter 9 Disposal of used oil

Used oil, which is removed from the power unit and the plant during an oil change, must be treated as a polluting product, in accordance with the legal prescriptions of the country in which the lift is installed.

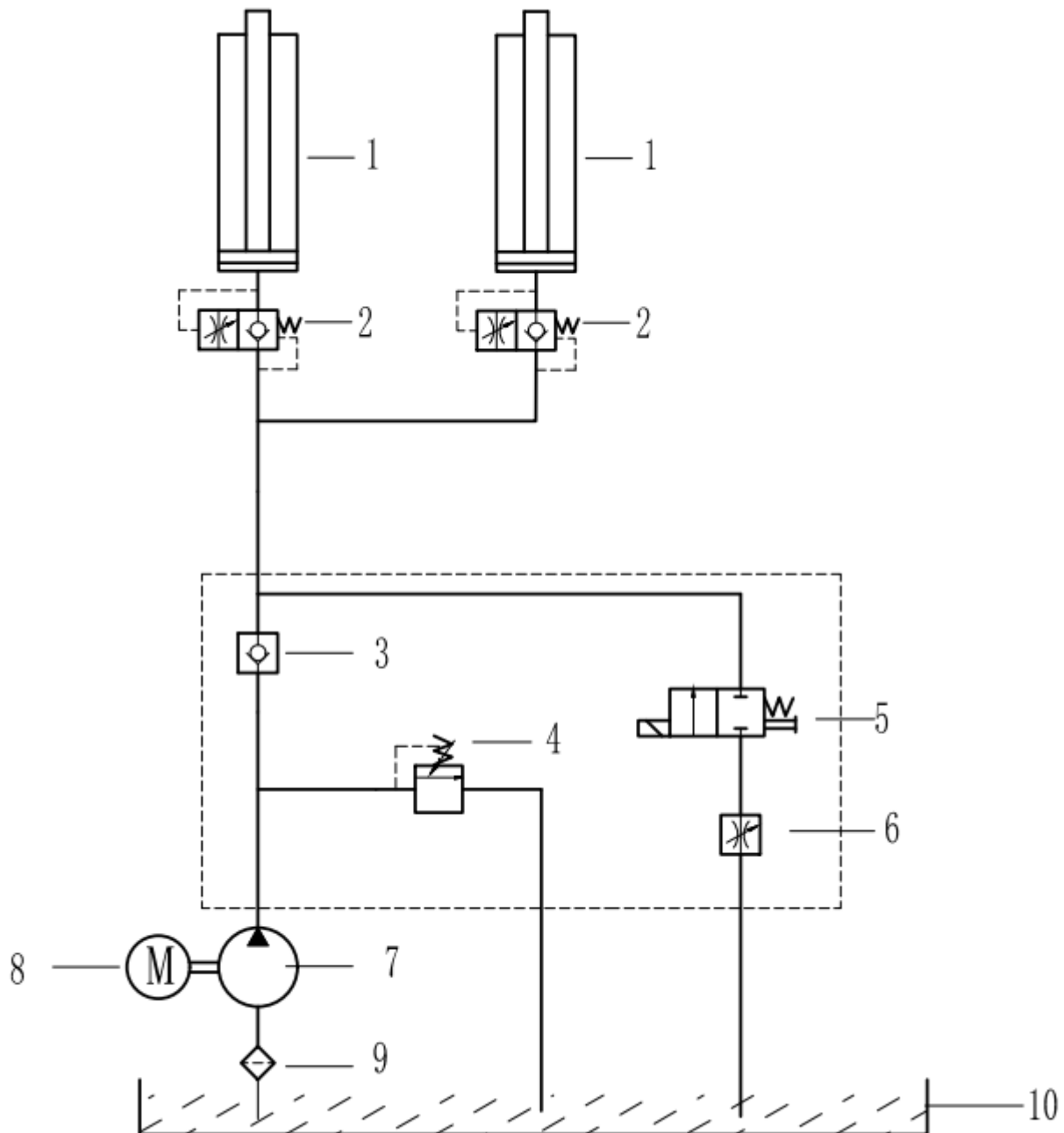
Chapter 10 Machine demolition

The machine must be demolished by authorized technicians, just like for assembling. The metallic parts can be scrapped as iron. In any case, all the materials deriving from

the demolition must be disposed of in accordance with the current standards of the country in which the rack is installed. Finally, it should be recalled that for tax purposes, demolition must be documented; submitting claims and documents according to the current laws in the country in which the rack is installed at the time the machine is demolished.

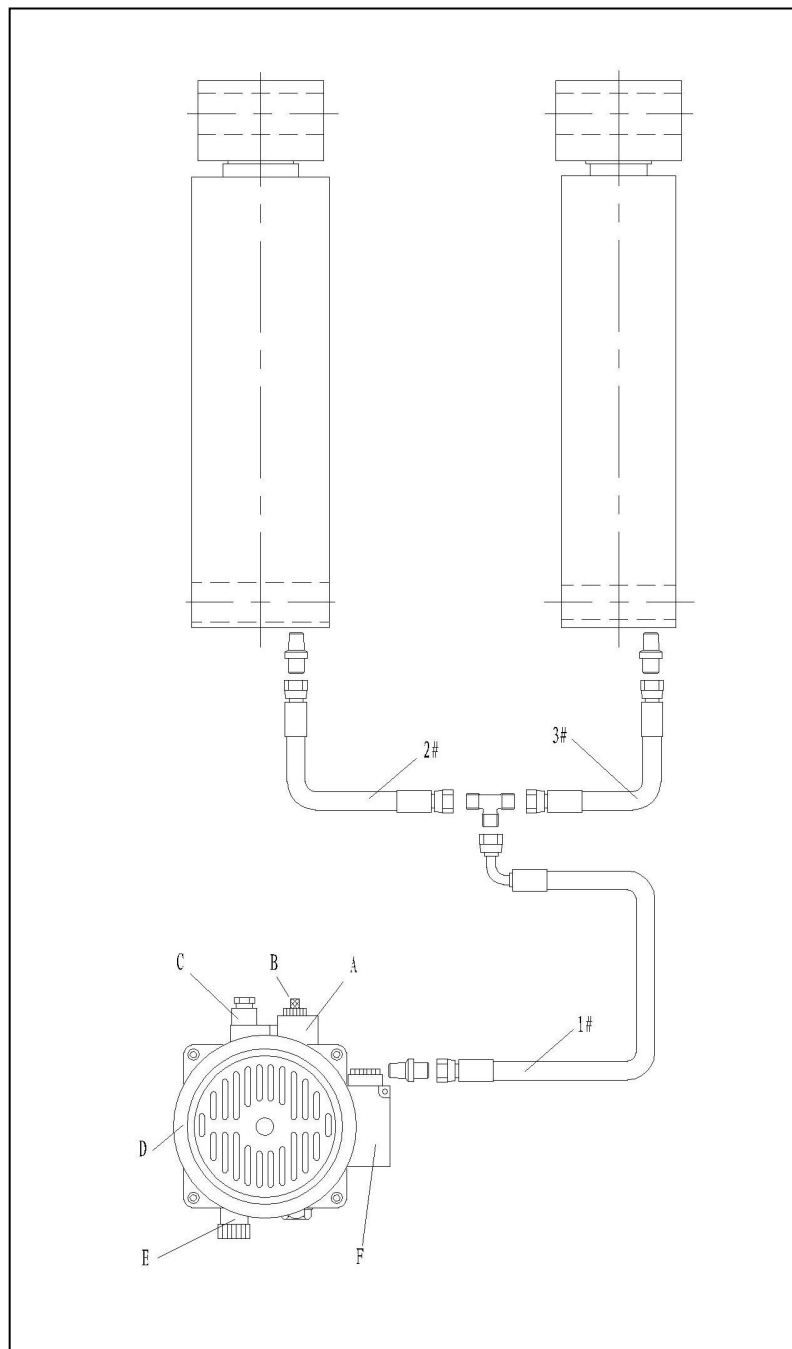
ACCESSORY

Hydraulic pressure elements diagram



- 1, Main cylinder 2, anti-explosive valve 3, check valve
- 4, overflowing valve 5, solenoid valve for descent 6, flow control valve
- 7, gear pump 8, pump motor 9, filter 10, oil tank

Oil pipe connection diagram



A Descent valve B Valve core of descent valve C Loop of descent valve D motor
 E Overflowing valve F Motor wiring box G Oil hose